

## OP SPOT

# Overcoming conversion problems

By Bernard Allen

## HINT OF THE WEEK

## Beware hardware errors

THIS week's hint points to the need for operators to be alert to hardware problems.

Hardware errors which occur on disc drives can be serious and expensive both in terms of lost machine time and money costs.

If a drive has damaged read/write heads, any disc placed upon the unit will be made defective.

Should that disc then be mounted on another disc drive, that also will be ruined, and so on.

Disaster.

So in the case of hardware errors on disc drives, the operators must be sure to inform an engineer or the operations manager. In this way any serious problems may be avoided.

## That £5 offer still stands

IT seems to me that most operations staff must get a pretty good salary because a couple of weeks ago I offered £5 to anyone who has a hint published in *Op Spot*. And as yet nobody has taken me up on it.

The offer still stands. The hints may be technical or non-technical in content, but please be sure to state your name and that of your company clearly, giving a telephone number on which you may be contacted during the day.

## NatWest night-shift transport not good enough, says NUBE

TALKS are taking place between the National Union of Bank Employees and the National Westminster Bank on two matters concerning operations staff: safety and the calculation of shift allowance.

It is a good idea for all the operations staff to run small jobs of their own on the system in order to get accustomed to the job control language.

If the jobs fail, all the better. The operators will learn something about the JCL errors and system codes, and this will prove to be of considerable value later on.

Concerned for the safety of its members working at the bank's centre in Leman Street, London E1, the union continues to press for the provision of transport to take staff home at the end of evening and night shifts (Op Spot, March 16).

## Training booklet

OPERATIONS training specialist Infotech Operations Ltd has published a booklet which outlines the courses they run for operators and operations management. The Operations Training booklet July-December 1978 is available, free of charge, from John Blake, Infotech Operations Ltd, Nicholson House, Maidenhead, Berks. Tel: Maidenhead (0628) 35031.

Such a service would be of use in relation to the evening shift and would be no help to staff in the case of the night shift finishing early. It calls for flexibility by the bank.

On shift allowance, the union wants the implementation of a points system by which the allowance is calculated in accordance with the social hours worked by staff. The bank has agreed in principle.

They must insist on being sent on a basic appreciation course, followed closely by one more advanced in content, well before the new machine is actually installed.

Now to experienced operators the change in hardware will not present much of a problem, but the new operating system with its different concepts and facilities will call for greater effort and study on their part.

They must insist on being sent on a basic appreciation course, followed closely by one more advanced in content, well before the new machine is actually installed.

After this the operators must take matters into their own hands and make an effort to get in touch with the appropriate user groups.

These groups are very useful as most maintain a so-called skills register, in which the experience of all the members is pooled.

Many allow first-time users to join their ranks before the machine is actually installed, so that the new members get a full run-down on the problems they are likely to encounter.

Some, such as the Operations Group of the IBM Computer Users' Association, help the operations staff to get acquainted with the new system. Sometimes staff are taken to other sites where they receive a thorough training.

Back at their own site, the operations staff must persuade the management to give them a say in how the conversion programme is planned and executed.

They must insist that at least two of the operators are used in the conversion team in order to work closely with the systems and programming staff.

These operators would be responsible for the scheduling of all the testing, work and helping to produce documentation of a sufficiently high level. They would, of course, keep the rest of the operations up-to-date about all new developments.

To prevent friction among the operations staff, the management would be well advised not to take on staff above the level of senior operator. At the same time, the new staff should not be expected to use their experience to give advanced training and to help those on higher grades.

They have to bear in mind that they, and not the programmers, have to live with badly written systems.

In some cases the conversion process may be followed by a change in the shift pattern employed at the site, from two to three shifts for example, and this will pose a difficult problem for the management who will have to recruit additional staff.

At what grades should the new staff be employed? On the one hand the management must be loyal to the existing staff, while on the other they must recruit operators with enough knowledge of the system to be of immediate use.

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# Project Prelude opens doors to office of future

FOR its teleconferencing evaluation in Project Prelude, Aetna used a satellite link between its headquarters in Hartford, Connecticut, and its Chicago office. According to John J. Donovan, Aetna's director for corporate data processing support, the evaluation had four objectives: to assess the cost/benefit potential of such advanced communications services and opportunities for increased productivity; to increase user awareness of communications alternatives created by emerging technology; to determine likely costs and schedules for the new services; and to evaluate satellite communications and associated terminal and other equipment.

In a series of two-hour sessions, various departments and interested persons from Aetna's home office and Illinois operations conducted departmental meetings and training programmes to evaluate teleconferencing's potential for marketing, administrative and in-

structional activities. Donovan noted that marketing, training and administrative functional areas were equally represented among participants, as was each major operating division. Most of the people were from middle management, though there were several senior divisional and corporate vice-presidents.

In comparing teleconferencing to travel as a method of organising a meeting, 69% of Project Prelude participants viewed teleconferencing favourably, with training and underwriting personnel more positive, and marketing and administrative personnel less so. Participants considered the most important advantages of teleconferencing to be saved travel time and the ability to "see the right" people more readily available. Saved travel expense and quicker decision-making were viewed as less important, as was the capability of getting more people involved in a video meeting than would be possible with travel.

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Donovan reported that no one type of meeting surpassed others when respondents answered the question: What types of meetings do you think may be suited to teleconferencing? "Some fell only large groups would be ideal, while others felt only small groups," Donovan said.

"Marketing meetings to present new products or provide sales support were identified. Project Prelude participants viewed teleconferencing favourably, with training and underwriting personnel more positive, and marketing and administrative personnel less so. Participants considered the most important advantages of teleconferencing to be saved travel time and the ability to "see the right" people more readily available. Saved travel expense and quicker decision-making were viewed as less important, as was the capability of getting more people involved in a video meeting than would be possible with travel.

In general, Donovan feels that teleconferencing can be used effectively in certain marketing, training and administrative activities to eliminate travel time and expense. "Taken by itself, teleconferencing may cost as much as, if not slightly more than, saved out-of-pocket expenses and lost executive time," he noted. "Real savings, however, will be achieved by resupplying otherwise lost travel time to more productive work, and by being able to do things not possible today.

"We expect the projected hourly use charges can be favourably reduced by exploiting new technology developments wherein video requirements are combined with voice, data and electronic mail needs in an integrated corporate communications facility. The overall benefits analysis is strengthened further as we move into the 1980s, when increasing personnel and travel costs are compared to electronic communications costs."

In their analysis of the office of the future, other insurance companies have also concluded that operating costs may not decline with the introduction of automation. Seymour Sternberg, vice-president of Massachusetts Mutual Life In-

necessary to draw upon the technical expertise of the data processing organisation. Furthermore, as the mail and filing activities of the office begin to merge into computer storage and transmission facilities, an integration will again be forced. Although some companies will attempt to transfer key data processing people to service the administrative organisation, most companies will find that an information services division, responsible for the processing, storage and transmission of digital data, voice and image

The acceptability to the business community of integrated satellite communications services, such as the "automated office", electronic mail and teleconferencing, was shown to be more than a salesman's dream by the Project Prelude experiment, carried out by Satellite Business Systems. For Project Prelude, SBS, which is jointly owned by IBM, Comsat and insurance company Aetna Life, provided the first US link-up of business equipment with high-speed satellite communications channels for voice, data, facsimile and teleconferencing. Users in the experiment included Rockwell, Texaco and Aetna Life itself and the results showed considerable enthusiasm for the service (CW, July 13). In this article, Boston-based communications expert MORRIS EDWARDS looks in detail at Aetna's Project Prelude experiences, and at analyses by other companies of the way in which the automated office of the future might be implemented.

Donovan reported that no one type of meeting surpassed others when respondents answered the question: What types of meetings do you think may be suited to teleconferencing? "Some fell only large groups would be ideal, while others felt only small groups," Donovan said.

Donovan reported that no one believes that hardware and software costs will offset savings in secretarial and paper-related expenses, and operating costs may even increase.

In another paper, Robert A. Shafro, senior vice-president of New England Mutual Life Insurance, termed the office of the future a "merger of technologies, organisations and ergonomics."

In this era of heightened competition, cost control and efficient management techniques, Shafro stated, the life insurance industry in particular has little choice but to harness data processing, storage and communications technologies for its office functions, just as it has applied automation to much of its new business, premium collection, policy holder service and accounting functions.

As Shafro sees it, the challenge is threefold: to blend technologies involved with communications and data, word and image processing which, formerly, have presented piecemeal solutions; to integrate previously independent information reservoirs and unrelated organisations of the corporation, such as data entry and data processing, word processing, voice communications and records management; and to adapt tomorrow's office environment to the vast numbers of people that must make it work.

As candidates for automation, Shafro identified the functions of information capture, document creation, information search and retrieval, information routing, document formatting and outputting, work-in-process control, and personal services. He noted that much of the necessary equipment to automate the office is either currently available or in prototype form as discrete devices.

"Probably the single most important factor for the incremental electronic office, however, is the human engineering aspect. More people, in more departments, at more levels of the corporate hierarchy must interface with all sorts of terminal devices. Ergonomics, the science of harmonising people, environment and technology, will play a significant role in shaping the successful future office."

**The transition from today's office environment to the office of tomorrow will take the form of gradual evolution rather than a rapid revolution.**

Another factor facing the evolution will be the organisational impact of information technology. "Previously unrelated areas of the corporation - the mail room, the word processing centre, the telephone operation, space planning, file room, the microfilm centre, the printing centre and the data processing department - must join hands in a co-ordinated approach," Shafro noted.

"What is needed, he believes, is a solution to the problem of hardware compatibility and the development of software to support image storage, retrieval and transport, as well as to control work flow and to handle text processing requirements. "Since processing and storage will most

likely be split between the central host and local workstations," he added, "host and local programming code must be compatible."

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# Classic success rules out GEC link

THE success of Modcomp's new Clayte 7860 system has ruled out any possibility of major collaboration with GEC, according to Ken Harpie, founder and chairman of the Florida-based minicomputer.

Modcomp had detailed discussions with GEC late last year which centred on the UK company taking a stake of about one quarter of the shares in Modcomp and, even after the talks were broken off, some kind of collaboration in Europe was envisaged (CW, February 9).

"GEC is now out of the picture altogether," Harpie told Computer Weekly in an exclusive interview at the company's Fort Lauderdale headquarters.

"Late last year our stock price was very low, and we were looking for some kind of insurance in case our figures did not turn round. But our performance since then has been so good that we no longer need any support."

"We anyway discovered a basic cultural problem with GEC."

Harpie declined to elaborate on the "cultural" differences, but they may have something to do with GEC managing director Sir Arnold Weinstock's lukewarm feelings towards the computer industry.

New models are coming shortly in the Classic line, which will ultimately consist of three basic processors. There will be a new powerful processor above the one used in the Classic 7860, and micro-Classic at the bottom of the line. All are 16-bit machines.

"We will begin software deve-

lopment in the UK in the fourth quarter of this year and are also doing final assembly and test of systems there. We plan to begin volume production in the UK in two years' time."

There is a stronger emphasis on software at Modcomp than at most manufacturers, and the company already has 75 to 80 software development engineers as against 70 on hardware.

## 'Double your memory'

THE facility from Teletel which enables users of the veteran Univac 1108 to double memory capacity to 512K words, has now been formally announced by the company. First revealed in Computer Weekly (March 20), the package, called Teletel 1108 X-10, adds four additional memory access channels and uses Teletel's 1-7008 128K word memory modules.

The 1108 X-10 package costs \$440,000 with 286K words of memory, including modifications and installation.



## Univac the star at Sperry Rand

AT a time when all the leading US computer manufacturers except IBM are reporting major profit surges, several US analysts have singled out Univac for particular attention.

In Sperry Rand's first quarter (April to June), profit rose over 20% to \$4.2 million on turnover, up 17% at \$972.5 million. Chairman and chief executive Paul Lyle identified Univac as the star performer with new orders up nearly 25%.

The backlog for the 1100/80, largest machine ever introduced by the company, has tripled over the past year, and according to Lyle, Sperry will be investing a "disproportionate amount" of its research and development budget in the Univac division.

"The computers we are working on for the future will offer as much price-performance improvement over existing computers as today's computers offered over their predecessors," Lyle told the Wall Street Journal.

The meeting is being arranged by Lingard in co-operation with Delli, the French government body which oversees the computer and electronics industries and, according to Lingard, the intention is to discuss areas in which UK and French peripheral builders can "sensibly co-operate."

Lingard pointed out that the Prime Minister and President Giscard decided that computer peripherals should be an area of co-operation between the UK and France when they discussed economic co-operation earlier this year.

Lingard said that a group of UK peripheral manufacturers, including Data Recording Instruments and Data Dynamics, had met at the Department of Trade several times over the last nine months, although no decisions had been made yet about co-operation.

One existing example of Anglo-French co-operation in the peripheral area is that between Data Dynamics and Périfé, which is its French subsidiary, but which enjoys a high level of autonomy.

Development and production of terminals is divided between the French and UK organisations.

• The "effacement" of French government intervention in the national computer industry is announced by figures just published in France by Delli and by the Club de la Périfématique.

For the first time since 1970, the French hardware industry had a balance of trade surplus last year, with hardware and services exports standing at \$8.822 million French francs, \$550 million, and imports 0.4% less at \$8.589 million francs, \$465 million.

This performance is considerably better than that of the UK, which last year exported about \$500 million of hardware but imported almost \$700 million.

The Club de la Périfématique did particularly well, with combined turnover of its members in 2.85 million francs (\$100 million).

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## ROUNDUP

A summary of main news items which have appeared since the last issue of Computer Weekly International.

## NEB transatlantic micro venture

KEY features of the plans announced for Inmos, the UK National Enterprise Board's venture into the memory and microcomputer market, are an American managing director, semiconductor pioneer Dr Richard Petritz, and production facilities in the US and possibly the Far East. The corporate HQ will be in the UK. The company will aim directly at the volume world markets that are developing for VLSI microcomputers and storage devices manufactured using N-channel MOS process technology.

PRESIDENT Carter has made it clear that the ban on the export of a Univac 1100 mainframe for the Soviet News Agency, Tass, was an isolated response to the sentences passed on the Soviet dissidents. Tass wants the machine in part to provide message services for journalists during the Moscow Olympics (CW, July 27).

PARTS of IBM's VM/370 operating system have been recoded by Amdahl Corp in order to reduce the overhead imposed by running the large-scale MVS operating system under VM (CW, July 20).

AN average of one school year's gain in reading level was made by several hundred "functionally illiterate" people in the US after only 12 hours' reading training on a Control Data Pico system using the Basic Skills Learning System. Similar success was also shown in mathematics teaching (CW, July 20).

OPEN competition in the provision of all communications services and the ability for common carriers to provide non-telecommunications services were among the sweeping changes in a legislative proposal on the com-

## PT 7

The other terminal for IBM and ICL mainframes

FERRANTI

## INTERNATIONAL NEWS IN BRIEF

### £5.5m order for Sweda

A CONTRACT for point-of-sale equipment, signed in the US by the Handy Dan Home Improvement Centres division of Dayline, for Sweda 800/80 Home Centre Systems could be worth £5.5 million over five years.

This figure is based on the planned increase in the number of stores in the chain. The equipment comprises six to 12 Sweda 800 PoS terminals and one System 80 processor per store.

### 470V/7 for AT&T

FURTHER underlining AT&T's status as a prime Amdahl customer, the Western Electric subsidiary at its Warrenville, Illinois, plant is to get the first Amdahl 470V/7 mainframe later this month. This is claimed to be "considerably more powerful" than IBM's 3033. Also in line for a 470V/7 is American Airlines in Tulsa, Oklahoma, which already has a 470V/6 (CW, January 12).

DPCE general manager Max Eastwell said that DPCE would probably open an office in Italy within the next 12 months, with Milan as the most likely location, adding that Italy was the most promising of all the other major European countries for DPCE because of the level of dissatisfaction there with

the traditional keyboard/VDU set-up.

DPCE employs 43 people at the moment in the UK including 27 customer engineers, and about 100 worldwide, most of the others being in Australia where DPCE's customer line-up includes Qantas.

The UK built system that enables data to be input directly as it is written, the Quest Datapad, has been installed by Publico NV, one of the biggest newspaper distributors in the Netherlands. It will be used for data entry jobs where the more traditional keyboard/VDU set-up is awkward and where recording information on a piece of paper and then keying it is an unnecessary waste of time.

The Datapad system installed by Publico at its Tilburg computer centre has 16 keystations and has taken some of the workload off an existing key-to-disc system.

The Datapad keystations are used for recording orders and order changes telephoned in to the Tilburg centre.

As with a conventional key-to-disc system, the Datapad data entry stations are linked to a minicomputer controller. At Publico the Datapad system collects data for processing on Publico's Honeywell mainframes and Quest points out that the Datapad system has also offloaded editing tasks from the Honeywell system.

### Space debut

PROBABLY the first batch of semiconductor material ever to be man-made in space has been produced by Vladimir Kovaiyevich and Alexander Ivanovich Salyut 6 space laboratory. Such manufacture in space is of considerable long-term importance, for zero gravity produces much better crystal orientation in silicon, leading to potentially higher production yields and performance of devices.

ITT intends to concentrate on small business applications in the future.

ITT already sells complete systems from Apple, and the manufacturing licence has been under negotiation for several months (CW, May 18).

### £500,000 order

A £500,000 order for the Plessey 4680 telex and low-speed data system has been awarded to Plessey Controls of Poole by the Government of Brunel.

An advertiser runs his advertising in a supportive atmosphere or, at the very least, a neutral atmosphere, not a hostile one."

Agreed to a free exchange of software.

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### German defence university

### installs Univac 1100/21

A NEW German university run by the defence forces has installed a 1100/21 mainframe computer from Univac. The machine, serving 45 Uniscope 100 display terminals and 17 matrix printers and five graphics terminals, will support studies in mechanical engineering, elec-

tronics, teaching, management and general administration.

The university, in Hamburg,

resulted from a proposal by Helmut Schmidt, the West German Chancellor, to improve the development and culture of the defence forces. The first buildings were ready in 1976.

For further details contact

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# Chief Programmer

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In addition to the TP network, their facilities include

- \* Timesharing
- \* TOTAL Database (under investigation)
- \* On-line Program Development techniques

West London

New areas of hardware are also under investigation, such as graphics display systems and Series 1.

These expansion plans have created a vacancy for a Chief Programmer who can lead and motivate a team of c10 programmers.

Apart from possessing leadership qualities you must have a strong COBOL background and the ability to influence program design, advise and implement standards, set schedules for program development and control the programming operation to ensure deadlines are met.

If you feel you can meet the above requirements, please contact Marilyn Black, quoting Ref: 1824/CW.



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# MYTH SHATTERING NEWS FROM CAP-CPP

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We believe CAP-CPP leads the world in software for new computing technologies, as well as being an established leader in more traditional computing.

Projects include the use of a wide range of equipment including DEC, IBM, ICL, Zilog, Intel, Motorola and Burroughs. The range of software used is even greater and application areas include warehousing, process and stock control. Ref. No: 1140/CW.

Our systems include a range of large banking and insurance projects on large mainframes.

The major portion of our work is now in the small business systems field using minis and micros but often for large clients. Our staff work closely with a number of mini and micro manufacturers, as well as in the traditional areas of mainframe computing.

## "MYTH"

A software house like CAP-CPP cannot offer me a future in my computing is going to be limited. For 10 years CAP-CPP has grown and made regular profits. During this time we have built a considerable expertise in many areas of computing. Next year we will spend nearly £1 million on staff courses and training to ensure that our staff stay ahead of the market in their skills.

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Project experience in commercial or technical projects with at least a year in a project leading role. Suitable applicants who have the ability to offend with administrative detail coupled with a keen interest in remaining involved with the technical aspect of computing. Ref. No: 1157/CW.

Product experience of computers, operating systems and communications software is needed. Knowledge of PDP software and CORAL 68 would be of particular interest. Ref. No: 1156/CW.

At least 4 years experience in commercial and commercial systems involving a variety of applications is essential. The ability to liaise with clients in a pre and post sales advisory role is expected. Typical experience would cover accounting, order processing and stock control systems. Ref. No: 1157/CW.

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Our systems include a range of large banking and insurance projects on large mainframes.

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Experience of both or on-line commercial systems is required.

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Reference JC 31/1

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Reference PG 31/3

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Reference JC 31/2

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H'Well	OS2000	Op. (No Nights)	1½ yrs	Middlesex	£4000
NCR	B1	Operator	1½ yrs	Essex	£3800
PDP	Dec 10/11	Operator	1 yr+	City	£3700
PDP	Dec 10	Junior Op.	6 mths+	City	£3300

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Reference PG 31/4

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Contracts of varying lengths — minimum 3 months — in Switzerland or Germany. Excellent salary offered to the right people.

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**RPG II Programmer c.£5,500 p.a. gross**

Boris Holdings Limited, a member of the RTZ Group, is replacing the existing 360/40 with an IBM System 34 using on-line data entry facilities.

We wish to recruit a programmer to replace the Data Processing Manager in the conversion and development of new systems.

The successful candidate will probably have 18 months' 2 stage experience in RPG II on System 32 or System 34 and will be capable of deputies for the Operation Manager of the Data Processing Manager.

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Please apply for application form to: Mike East, Personnel Officer, BORAX Holdings Limited, Cox Lane, Cheshunt, Herts, EN9 1SP. Tel: 01-927 6111.

Ref. 01-438 2640 Ext 2897

Closing date for receipt of applications: 1st August 1978.

Ref. 01-438 2640 Ext 2897

## NEW TECHNICAL SUPPORT POSITIONS IN OUR PROFESSIONAL SERVICES DIVISION

Our Professional Services Division provides a wide range of consulting services to Industry, Commerce and Government — both independently and in support of our Systems and Data Services divisions. These new positions arise in expansion of our technical support group involved in pre- and post-sales assignments.

### WHO IS CONTROL DATA?

WE are a computer company employing 11,000 people worldwide.

WE have a firm commitment to the computer industry, the United Kingdom and the training and advancement of people.

WE are a world leader in the provision of computer services, large-scale computers and peripheral equipment. This position is continually strengthened by our ongoing investment into more advanced products and services. Such a range of activities presents considerable scope for the advancement of personnel at all levels and disciplines.

WE offer a challenging and rewarding career opportunity with involvement in software development, installation and support, together with some sales-related activities in the areas of system configuration and benchmarking.

WE are looking for technical people of the highest calibre and offer salaries and associated benefits commensurate with the demands of the post.

If you have the qualities and experience we are seeking — please read on.

Please write to Mrs. Margaret Spence with full details of your career to date. Professional Services Division, Control Data Ltd., 22a St. James's Square, London, S.W.1. Telephone 01-930 7344.



### WHO ARE YOU?

YOU will be intelligent, enthusiastic, articulate and self-motivated.

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YOU may have a degree in computer science but more essential is a sound knowledge of operating systems, the ability to quickly comprehend new concepts and to communicate with customers.

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Professional Services Division, Control Data Ltd., 22a St. James's Square, London, S.W.1. Telephone 01-930 7344.



MORE THAN A COMPUTER COMPANY

## USER SUPPORT PROGRAMMER

The Daresbury Laboratory, located in the Cheshire countryside, is developing major national facilities for research into atomic, molecular, solid state and nuclear physics. Exploitation of these facilities requires first-class computing support. Computer at the Laboratory include an IBM 370/165, GEC 4070, PDP-11's and Interdata's.

We are looking for young people, male or female, to fill vacancies in the User Support Group which is responsible for providing general computing whilst advantageous is not essential all training will be provided.

Appointment will be made at one of two levels:

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Salaries fixed according to age, on the following scales: £1,776 to £2,202. Examples of starting salaries are £1,776 at age 16; £2,202 at age 21 or over. Older candidates might receive additional increments if they have previous relevant experience.

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Closing date: 18th August 1978.

Application forms can be obtained by telephoning Warrington 58100 Ext. 482 or writing, quoting reference number DL/839/SV, to:

The Personnel Office

**DARESBURY LABORATORY**  
Science Research Council  
Daresbury, Warrington WA4 4AD

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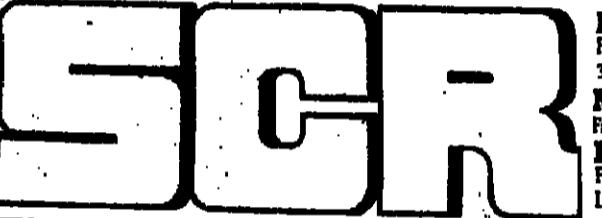
Our Clients are a highly successful timesharing organisation whose commitment to commercial applications and customer training has ensured their success within the United Kingdom. They are now expanding their client base in the North of England from a Manchester location. They offer a full range of timesharing packages with particular specialisation and success in the area of Database management.

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**CONTACT: Sheila Bradbury on 061-833 0427**

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Operations Manager, BL Cars Limited, Data Centre, PO Box 5, Redditch, Worcs.

**BL Cars Limited**

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### Computer Appointments

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£5,500

PROGRAMMER £4,750

HOUSING AVAILABLE

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The Analyst, who will be based in King's Norton, will need System 3, 32 or 34 experience. He will be responsible to the DP Manager and will be liaising at Director level.

The Programmer, who must have 2903, 4 or 1900, and On-Line experience, will be based at Redditch.

For both positions RPG II is a must.

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(plus pay award pending)

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We need a young (but reasonably experienced) operator, with the ability and confidence to take charge of our computer room when the Shift Leader is absent. We have several computers — mainframes and minis. There is an unusually wide variety of job mix — scientific and data processing — batch and minicells. Three shifts, five day week.

For further details, or to arrange an informal visit to the Computing Unit, please telephone Miss A. MacDougall, Secretary to the Operations Manager, on Guildford 71281 ext. 470/488.

For an application form, write to the Staff Officer, University of Surrey, Guildford, Surrey GU2 5XH, or telephone Guildford 71281 ext. 452.

## Systems Analysts

Starting salary up to £7000 p.a.

The construction industry offers a unique opportunity to develop systems in areas which are relatively unexposed to computerisation.

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— integrate into that system, a project control system to ensure outputs and costs are effectively controlled.

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These are just a few of the many areas our client wishes to computerise to ensure continued competitiveness and success in the 1980's.

Their current computing needs are met by:

★ IBM mainframe

★ TP network based around 3270

★ Timesharing

★ TOTAL Database (under investigation)

★ On-line program development techniques

If you have a proven track record of systems design and implementation, the ability to lead a project and communicate at senior management level, then you would find this a very exciting environment in which to work.

Our client is based in North West London and offers a bonus system, free BUPA membership and Life Assurance, 4 weeks' holiday. Ref: 1825/CW.

Please contact Marilyn Black.



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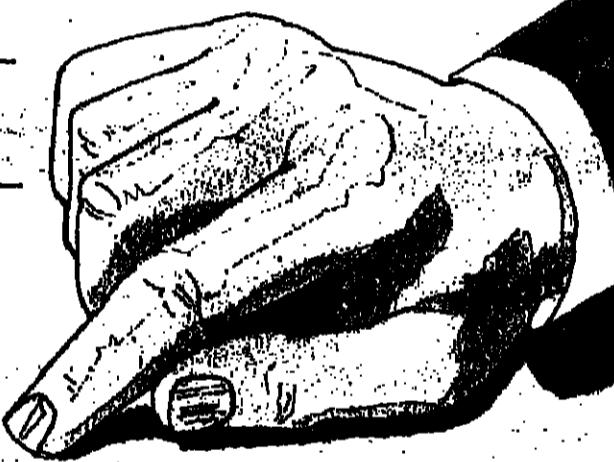
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Quite a few people have done it before you, and one of them has this to say: ... our department can offer a more complete spectrum of work than any other company. Mini computer, micro computer, application packages, standard software, compilers, operating systems, techniques and specialisms. The disciplines involved ... the career development ... the potential for line management ... all contribute to a good career.

The only way to find out just how exciting this work is, and how rewarding, is to contact us.

Please write immediately to D. C. J. Watkins, Software Manager, Marconi Radar Systems Limited, 'Freepost', Chelmsford, CM1 3BR, Essex. (no stamp required) Tel: Chelmsford (0245) 67111.



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JUNIOR OPERATORS for West End business. Varied workload, excellent benefits and solid career prospects in return for 6 months plus experience.

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£4,500+ to £4,600+

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BURROUGHS IBM 370/135

£3,500 inc

JUNIOR OPERATORS with 6 months plus experience. City based. Prospects excellent. perks include 4 weeks' hols, LVS, bonus, ticket loan.

### PROGRAMMERS

RPG II PROGRAMMERS

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JUNIOR/SENIOR OPS with POWER VS experience and Shift Leader/Programming potential for the Southern Home Counties. High shift allowances and good benefits.

BAL & PL1 PROGRAMMERS

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Wellcome

The Wellcome Foundation Limited is a major British-owned international pharmaceutical company. We have recently completed our new, purpose-built Computer Centre and acquired a new configuration, comprising of an IBM 370/145 and 370/148.

We now wish to further strengthen and enlarge our present operating staff and can offer attractive opportunities on a 5-day week - 2-shift system (8 am-4 pm / 4 pm-midnight). to.

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c £5000 inc. Shift Allowance

To lead a team of operators. Candidates should have at least 2 years' experience using OS/VS1 or MFT. Experience on OS/VS1 JCL would be a distinct advantage. REF FY/754/1

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c £4200 inc. Shift Allowance

Candidates should have at least 12 months' experience using OS/VS1 or MFT. REF FY/754/2

You'll have a say in the definition of complete systems. You'll work through each project from design to on-line testing, and liaise with customers to determine their exact requirements. Since the systems are central to the product itself, you'll rub shoulders with specialists from other technical fields and gain an understanding of their activities. We're talking about very advanced projects, with sophisticated fail-safe and standby facilities, rapid response times and modern man machine interfaces.

We need  
**Senior Analyst/Programmers**

with five years software experience.

**Consultants**

with eight years programming and analysis experience.

Salaries will be commensurate with qualifications and experience and will be competitive.

All positions are open to men and women.

For more information and an application form, please telephone or write.

K. Grieve, Personnel Officer  
The Wellcome Foundation Limited  
Temple Hill, Dartford, Kent  
Tel: Dartford (32) 23488, ext. 2283.



### UNIVERSITY COLLEGE, LONDON

A new research project will involve development of models of network protocols, simulation of and design of distributed systems for distributed networks including STREAM, SPIN, ADDRESS and GATEWAY. These facilities available include several PDP 11 computers, access to many networks, and an interface to a range of other distributed systems. Experience in the research will be an advantage. Salary range £3,000-£4,000.

### A SENIOR RESEARCH FELLOW

is needed to direct the theoretical aspects of the project. A degree, strong theoretical background, previous research experience, and ability to communicate and/or design computer communication and/or analytical computer communication procedures are important. Salary range £5,000-£6,000.

### AN ENGINEER/TECHNICIAN

is needed to help maintain the PDP 11 computers and associated software. Duties include design and construction of computer interface equipment. Salary range £4,000-£5,000.

### A RESEARCH ASSISTANT/PROGRAMMER

is needed to assist with the practical aspects of the project. A degree, strong theoretical background, previous research experience, and ability to communicate and/or design computer communication and/or analytical computer communication procedures are important. Salary range £4,000-£5,000.

Applications by September 4th to Professor P. T. Kirke, Department of Statistics and Computer Science, University College London, Newgate Street, London WC1E 6BT.

### Computer Programmer

Letraset International have recently installed a PDP-11/34 mini-computer, providing computer facilities to 12 UK operational centres based in Central London and Ashford, Kent.

Current developments are in both manufacturing and financial areas within the company.

The successful candidate will join a small team providing commercial systems and programming support to these operational centres.

Candidates should be capable of working with a minimum of supervision and be educated to at least 'A' level. Eighteen months' experience of BASIC PLUS programming is essential and a knowledge of R.S.T.S. is desirable.

The company offers above-average terms and conditions of employment including 4 weeks' holiday and a 4½-day week.

For an application form, please contact

Peter Maher  
Personnel Officer  
LETRASET INTERNATIONAL LIMITED  
King's Norton Industrial Estate  
Ashford, Kent (0333) 24421

### Letraset

University College Hospital  
Intermediate Systems  
Designer/Programmer

To lead a small team working on the expanding Pathology data management and on-line acquisition system, and the design and implementation of a Haematology system.

The system is a C.T.L. Modular One computer with disc, backing store. The job offers considerable scope for experience in design, programming and implementing a computer system in a real-time environment. The successful applicant will be expected to adopt a disciplined professional approach, and must be used to working to time schedules.

Candidates should have at least 5 years' experience in computing. A knowledge of Modular One, Coral 68 or Medical Computing would also be advantageous. Salary including London Weighting £15,313-£16,379.

Application form and further information can be obtained from Personnel Department, University College Hospital, Gower Street, London WC1E 6AU. Tel: 01-387 9300, Ext. 381, quoting Ref. CW/16D/BP. Closing date 13th August 1978. phone 01-240 3223.

### SENIOR SYSTEMS ANALYST

Worcester/Birmingham

Redman Heenan International is an engineering Group of some 16 Companies and £30m turnover and a performance record showing improvement each year since 1971. They are currently restructuring and expanding their Group D.P. Service and seek a Senior Systems Analyst.

He will identify systems needs in the manufacturing and engineering activities, and develop and implement systems as required. He will control a systems team of analysts and programmers and will report directly to the Group D.P. Manager.

He must have in-depth experience of designing systems for manufacturing control applications and some programming experience (preferably COBOL and RPG). He will be analytical in diagnosis; imaginative in solution. Critical factors are technical ability and the personality to achieve results. Age is flexible. An attractive remuneration package will be offered.

Please telephone N.F. Churchill,  
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RW 31/1

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RW 31/3

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RW 31/4

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The installation for which we are recruiting is part of one of the largest commercial organisations in the south-east. It has been shown that they are not afraid to introduce new technology and techniques, and are now one of the most advanced installations in the UK. A major TP network is operative and is scheduled for expansion. Staff development and training are given clear emphasis and opportunities for progression are excellent. Starting salaries are negotiable to the above, dependent on experience and ability. Positions are based in Croydon in a pleasant environment.

These are openings to join a young and expanding team of systems professionals. To find out more telephone our CROYDON office or write quoting ref: CW 26-8H enclosing brief career details.

01-686 9693 (24 HOUR ANSAPHONE)  
19, PARK STREET, CROYDON, CR9 1TN

061 236 9085 FAULKNER HOUSE  
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The Board now requires the following staff to facilitate the introduction of the new equipment, to work on a number of interesting new projects and to provide support for existing systems. This provides the opportunity to join a professional and friendly team working to high standards. The Computer Centre is easily accessible from the M4 motorway and the British Rail Western Region Hayes and Harlington station.

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### Systems Analysts

Responsible for systems analysis, design, development, implementation and maintenance activities and liaison with programming, operations and user staff. Previous experience of systems work is essential.

### Programmers

Cobol experience essential.

### Operators

The Operators work on a shift basis (for which additional payments are made) and will be required to operate the Centre's present ICL system 4 computer, its eventual replacement, and the data transmission and ancillary equipment. They will also undertake data control duties, which include liaison with users, assembly/disassembly of computer runs and despatch of output. Previous experience of similar work is essential.

Intending applicants are invited to contact Tim Bevan, Systems and Programming Manager, or Joe Dodkin, Computer Operations Manager, on 01-573 5045 or write to British Transport Docks Board, Computer Centre, Hayes Road, Southall, Middlesex, UB2 5NE.



**British Transport  
Docks Board**

**Suffolk County Council**

**JUNIOR  
PROGRAMMERS**  
£2600 to £2750  
Just 1 year exp. or total Mgmt  
experience or a relevant  
qualification  
ALL AREAS  
01-995 3883  
FIREPORT, LONDON W4 386

# ANALYSTS....

... the Keys to your future

- ★ Varied systems development in a multi-national, multi-currency environment
- ★ Superb working conditions including open plan offices and excellent subsidised restaurant
- ★ Attractive COMPANY CAR scheme for senior positions
- ★ Start salaries up to £7,000
- ★ European travel

Your experience will be at least two years of systems design and implementation, coupled with a flexible approach and the ability to "think on your feet". A decided asset would be exposure to one of the following: mini-computers, distributive processing, IBM mainframes, financial and/or general commercial systems.

People with less than the above experience, but who feel they have the potential to succeed in this professional environment, are also invited to apply.

All contact through Capp Associates CROYDON office, telephone or write quoting ref: CG 181-8S.

COMPUTER AND PROFESSIONAL PERSONNEL CONSULTANTS



**CAPP ASSOCIATES**

01-686 9693 (24 HOUR ANSAPHONE)  
19, PARK STREET, CROYDON, CR9 1TN



Computing Services Association

Glaxo Holdings Limited

## Shift Leader (Two shift system)

Not Less Than £4600 + Company Bonus

A vacancy has arisen for a shift leader to work in the Company's Computer Centre located at Graham Street, London, N.1.

The installation consists of an ICL 19031 (128K) ED804 RTs, etc., supporting a VDU and RJE communications network. In addition a Hewlett Packard 3000/14 megabyte will be installed in October.

The successful candidate is likely to be in his or her mid-twenties, educated to 'A' level standard, have over 3 years' IBM operating experience, be conversant with George II and ICL software. Experience of communications equipment would be an additional advantage.

The remuneration indicated above includes Shift and London Allowances. Fringe benefits include subsidised staff restaurant, sports and social club, 4 weeks' holiday and free car park.

For an application form please write to Miss S. G. Ross, Glaxo Holdings Ltd., Graham Street, London N1 8JZ, or telephone Miss T. Hayes, 01-493 4080, ext. 237.

## PROGRAMMER/ SYSTEMS SUPERVISOR

S.F.I.A. Educational Trust, a charity, have recently installed an NCR 8260 to deal with the termly payment of school fees.

We are currently seeking an experienced Programmer to join and lead our small but rapidly expanding D.P. installation (expansion in both systems applications and hardware editions).

Candidates should have a knowledge of Cobol 74 and Inca operating systems.

Commencing salary will be dependent upon age and experience, and a company vehicle will be provided.

To obtain an application form please write to:

**PROGRAMMERS  
OPERATORS**  
S.F.I.A. Educational Trust  
19, Park Street, Maidenhead, Berks.  
Tel: Maidenhead 54291

### PROGRAMMER

A products with either an M.Sc. or equivalent experience in computing and data processing, and programming experience with a local access disk under supervision in the CDT. There will also be a knowledge of ICL 19031 or ICL 1904. A knowledge of IBM or ICL COBOL would help. Salary on the CDT scale as a minimum, plus £1000 per annum. Commencing salary £3000 per annum, plus a direct link to full current yield and direct award of two interviews.

Please, Edinburgh. Please quote reference 1018.

## International Opportunities at our European Software Technology Centre

Salaries in the range £3500 to £7500  
Bedford based

In our European Software Technology Centre, which is being expanded to handle work for the whole Texas Instruments corporation world-wide, we have the following career opportunities offering the chance to work on an international basis with the most advanced technology in the field. They provide the chance to travel to Europe and to the company's sites in Dallas and Houston in the USA. The option to transfer overseas at some future date is a strong possibility.

## Microprocessor Software Engineers

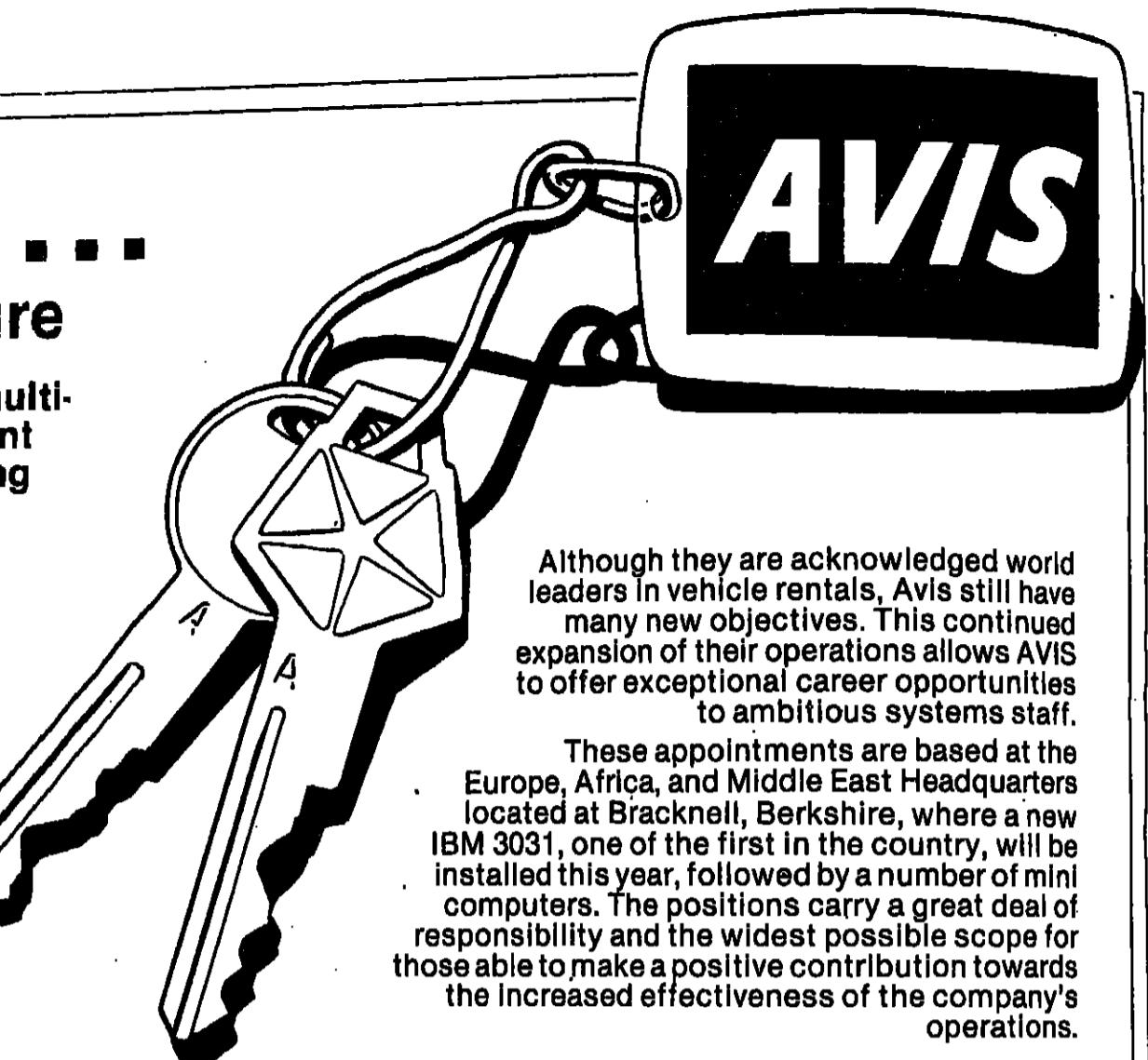
With a degree in maths, computer science and preferably some assembler programming experience. A knowledge of PASCAL would be an advantage. Self-motivation and the ability to communicate well at a technical level are essential.

## Fortran Programmer

To work in the design automation area developing large suites of programs on our corporate information centre (IBM 370/188 complex). A degree and some experience of technical Fortran programming are essential.

Salary reviews and promotion prospects are entirely merit based and benefits include generous assistance with re-location expenses, where appropriate, profit sharing, assistance with obtaining mortgages, subsidised staff restaurant, health insurance and pension plan.

For an application form, please telephone Bedford 67468, ext. 2228 or 3227, or write to Ann Stevens, Personnel Department, Texas Instruments United Monitors Ltd, Bedford.



Although they are acknowledged world leaders in vehicle rentals, Avis still have many new objectives. This continued expansion of their operations allows AVIS to offer exceptional career opportunities to ambitious systems staff.

These appointments are based at the Europe, Africa, and Middle East Headquarters located at Bracknell, Berkshire, where a new IBM 3031, one of the first in the country, will be installed this year, followed by a number of mini computers. The positions carry a great deal of responsibility and the widest possible scope for those able to make a positive contribution towards the increased effectiveness of the company's operations.

## Logistix Data Processing Recruitment Consultants

### European Data-Systems Manager Berkshire (European+US Travel)

Salary: Circa £8 - 9K + Expenses and Relocation

A leading US Electronics and Data Products Corporation has retained Logistix to assist in recruiting a European Systems Development Manager to be based at their Berkshire European Headquarters with total responsibility for Systems Development for all their European offices. This very important appointment will appeal to those who enjoy overseas travel in particular to the United States and throughout Europe.

The company is currently planning a comprehensive European network comprising mainframe and mini computers with a data-link to their host IBM 370/155 in California. It is anticipated that the successful candidate may be instrumental in advising on the configuration of hardware to replace the present stand-alone mainframe.

The high salary reflects the importance which our clients places on the filling of this appointment and important fringe benefits normally associated with a major US Corporation are of course provided.

Interviews will be held within 2 weeks of the publication of this advertisement and it is anticipated that an offer will be made within ten days of interview.

## HAVE YOU TRIED... CUTTING CORNERS?

I am a PROGRAMMER / ANALYST / OPERATOR  
(Delete as applicable)

looking for Employment in the ...

Name .....

Address .....

Home No. .... Work No. .... Ext. ....

Cut out and post to

**D.P. RECRUITMENT LTD.**

KENT HOUSE, 87 REGENT STREET, LONDON W1R 7HF



## CONTRACT SYSTEMS ANALYST

South Herts.

We have an urgent requirement for a contract Systems Analyst with a sound professional background to join a client on a long-term basis. Applicants must have good commercial IBM experience and be available to start immediately or within the next 2/3 weeks.

For more information ring:  
(from 2 p.m. Monday, 7th August, onwards)  
**HAYMARKET COMPUTING LTD.**  
Tel: Cuffley (Herts.) 4130  
up to 7.30 p.m.



### The University of Aston in Birmingham Computer Centre

#### SYSTEMS PROGRAMMER

An ICL 19048 provides the main links to the University and the work will involve the maintenance and development of a range of software provided. Applicants must hold a degree or equivalent. Salary within the Other Related IS Scale - £3188 to £5282 per annum.

Application forms available from Mr A. G. Ross, Staffing Department, The University of Aston in Birmingham, Coates Green, Birmingham B47 7ET, quoting ref. no. 0/095/CW.

£6,000+

£6,000+

#### SYSTEMS ANALYST

A relatively new D/F department with ongoing new development plans in progress, requires a Systems Analyst with around 18 months - 2 years experience, preferably in a commercial environment. A programming background is not essential.

£6,000+

#### PL1 PROGRAMMER

PARNBOROUGH

A large progressive Co. with an IBM mainframe offers exciting new development positions for ambitious PL1/COBOL PL/1/ASSEMBLER or BASIC programmers.

Lots of development work is planned which will provide first class opportunities for both job and career development. Annual bonus. Flexi-time, etc.

£8,500

#### 1900 SERIES

Contract Computer Operations Staff available.

INSTANT SERVICE. Very competitive rates.

8. London Computer Operations, 01-764 1852.

£6,000+

#### AMES PERSONNEL

Employment Agency Suite 14, Dryden Chambers.

19, Oxford Street, London, W1R 1PA. Tel: 01-434 1068.

£6,000+

#### BASIC PROGRAMMER/ANALYST--£5K PLUS

If you like the idea of working for a small Software House in Mayfair, and have 2 or more years' experience programming in commercial BASIC, we'd like to hear from you.

There are six of us at present, and we work in APL and BASIC on minicomputer systems and mainframe. Clients range from small businesses buying their first computer to multi-national with interactive systems acquired from all over the world.

£5,000+

#### MANAGER

who must be experienced in computer sales and capable of developing a sales area.

Please apply, Box No. 1973.

Computer Weekly, Dorset House, Stamford Street, London SE1 4BL.

£5,000+

#### ENGINEERS

£5000+

Hardware engineer and software engineer.

HOME COUNTRY

£5,000+

£5,000+

£5,000+

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# WEST GERMANY 55,000 D.M.

+ Substantial Benefits Package

PERMANENT POSTS - LARGE INSURANCE COMPANY  
MAJOR PROJECTS ON NEW 3033

## AN EXCEPTIONAL OPPORTUNITY FOR TWO DATA PROCESSING PROFESSIONALS

My Client is one of the largest Insurance Companies in Lower Saxony. The Company's history goes back 250 years. They are financially guaranteed by the State, but operate exactly as a privately owned Company. The Company has modern offices, provides excellent working conditions, and back up basic salaries with outstanding social benefits. All cultural, sports and shopping facilities are close at hand. The openings described below are permanent — relocation expenses will be met by the clients.

### SYSTEMS PROGRAMMER

Your first job will be helping replace a large 168 with a 3033. The present system supports 150 terminals both local and remote.

Your knowledge of large IBM mainframes will help ensure this upgrade is as smooth as possible. The greater your abilities on this type of architecture the more varied will be your field of responsibility. Knowledge of German is not a prerequisite but any you have will make settling in easier.

RW31/5

Telephone GEOFF MARSH on 01-499 4501 any time (24-hour answering service), for more information. If you prefer, you can ring him at home on GARSTON 79536.

## CHALLENGES IN REAL-TIME SOFTWARE

North London

### TEAM LEADERS

Up to £7,000 + Relocation

### SENIOR PROGRAMMERS

Up to £6,000 + Relocation

Our client — a major international corporation — is undertaking a large real-time Development project which is expected to have a major impact on national life in the eighties.

The ultimate operational system will be genuinely real-time providing an on-line service 24 hours a day, every day of the year. The highest degrees of technical integrity are therefore sought and, as you may imagine, the hardware includes many interesting specials. The software development function currently has vacancies at senior levels to produce software concerned primarily with on-line data collection, fault analysis and peripheral handling on minis and micros, and data communication with a mainframe.

All the openings below offer a real challenge for the dedicated software professional with his technical sights set high and seeking the stimulation of working with other technical high flyers.

Specifically our client is seeking the following people:

1. A SENIOR SOFTWARE PROGRAMMER with a good knowledge of processor hardware to head a small group of three people developing a maintenance system. Ref: RW 31/7
2. A SENIOR APPLICATIONS PROGRAMMER with experience and proved technical capability to join an applications team engaged on systems for interactive data analysis. Ref: RW 31/8
3. A TEAM LEADER initially to join a team of six engaged on the design of a peripheral handling system. Subsequently the person appointed will lead the implementation of the system. Ref: RW 31/9
4. A TEAM LEADER to take charge of a team of four engaged on the technical design of software to drive interactive terminals. Ref: RW 31/10
5. A TEAM LEADER to be responsible for the development of applications programs for interactive analysis. Ref: RW 31/11

All the above posts are situated in residential North London, within easy access to housing at all price levels and abundant social amenities. The positions all carry competitive salaries and large company fringe benefits.

If you have practical experience in any relevant field (e.g. process control, command and control systems, or systems software design) we should be pleased to hear from you.

Telephone TONY BAKER on 01-499 4501 any time (24-hour answering service), quoting appropriate reference number, for more information. If you prefer, you can ring him at home on 01-445 3512 evenings or weekends.

**hutchinson-scoggins recruitment**  
47/49 New Bond Street (entrance in Maddox Street)  
London W1Y 0HE Telephone 01-499 4501

### Real-Time Software Software Support

Middlesex & Travel £7,000-£8,000 p.a.

The Electronics Division of a Multi-National Company based in Middlesex need to increase their support teams on MINI Hardware and Software Projects.

Candidates with a background of Hardware, Software or Systems Support in Communication, Networks, Mainframe Interfacing or similar fields are invited to apply.

Career development and stimulus will certainly be offered through working with Distributors on the widest involvement of projects, product, and sophisticated communications network.

Additional responsibilities will include Product Evaluation, and Testing, Management of Training Resources, Establishing Standards, Pre and Post Sales Support and reasonable travel throughout Europe and further afield.

Ref CW 31/1

High Output / NEAT 3 London

An exciting opportunity has developed for ambitious Programmers and Analysts to join a medium size, expanding computer company involved in automotive and finance industries.

Our clients computer operations are based on NCR CENTURY 75, current plans include up-grading to a CRITERION Development is in progress on an interactive on-line communications system using audio response equipment on a nationwide basis.

Programmers are currently required with one year's COBOL on the NCR 8000 series. Experience of IMOS would be advantageous, we also need Programmers with 18 months NEAT 3 on Century machines.

Continual company growth based on the development of external customer's systems, guarantees excellent prospects for suitable employees.

Ref CW 31/2

### SA/Programmer Programmer Senior Operator

Dublin £4,500-£7,000

Our client, a major international company with an expanding DP department require the above personnel for future development. The company uses IBM hardware for processing its commercial and financial applications.

They require at least two years' COBOL programming experience for both positions plus exposure to systems design for the Analyst Programmer job. The Operator will need sufficient experience to be in charge of day-to-day running.

In addition to excellent salary and fringe benefits, relocation expenses will be paid where applicable.

Ref CW 31/3

### Systems Consultant

up to £7,500 + car

### Systems Engineers

up to £7,000 + car

Switzerland up to £16,000 p.a.

We wish to recruit 2 experienced technical writers for permanent positions with our Swiss clients.

The successful candidates will join large project teams, working up to 30 man years communications systems. Each technical writer will report to his project manager. The main responsibilities will include working to tight time scales, on the preparation of documentation and literature on the implemented projects for user purposes.

Candidates must have a proven track record in technical writing, and be prepared to work on their own initiative, servicing the needs of the project development teams in a highly progressive company in the communications field.

Ref CW 31/4

### Chief Programmer

NW1 UP TO £8,000 p.a.

British Home Stores require a Chief Programmer for their Marylebone Road Head Office, to take control of a team of fifteen Application Programmers.

Apart from the day to day administration, other important aspects are to ensure that work is completed on time, and is technically sound, plus Recruitment and Training.

The successful applicant will also be expected to play a leading role in the implementation of improved programming techniques and interactive programme development.

The installation is an IBM 370/146, to which will shortly be added an IBM 3031.

Ideal candidates will have programming experience in an IBM environment, using ASSEMBLER, COBOL and DL/1.

This position will attract people who wish to combine a future in application programming and management responsibilities.

Ref CW 31/7

C. £6,000

Irish Midlands Our client, a manufacturing company accessible to Dublin, requires experienced programmers for their up-to-date installation.

Our client requires a minimum of 2 years' programming experience in either RPGII or COBOL. Applicants will be given training where necessary. Systems experience awaits the successful programmer who has a good commercial manufacturing background.

The company offers these outstanding opportunities to secure very interesting work with great scope for the successful candidates who have the initiative to progress within an expanding organisation. In addition to a competitive salary and excellent working conditions on a new installation, there is a life insurance and pension scheme. Assistance will be given with relocation costs where applicable.

Write or telephone Dublin Office for further information.

Ref CW 31/8

### Consultants

Reading

A major international Software House require Consultants or Systems Analysts who have experience on Mainframe and Minis for their Reading office. You will be responsible for:

\* Advising clients upon their future computing requirements.

\* Ensuring that clients choose the hardware best suited to their needs.

\* Assessing the practical problems involved in implementing advanced Computer Systems.

\* Working with clients to ensure that systems are installed successfully.

Therefore we are looking for experienced Systems Analysts who have the confidence to advance into consultancy work, and who can communicate effectively with senior management. You should also have experience in either General Accounting, Production Control or Distribution.

Ref CW 31/9

# Central Computing Consultants

KINGSTON: 44 Wood Street, Kingston upon Thames, Surrey, England. Telephone 01-549 3212; Telex 27950

DUBLIN: Canberra House, 24 Lower Leeson Street, Dublin 2. Telephone 789577 (5 Lines)

Licensed annually by the Dept of Employment No SE(B)170

Ref CW 31/10  
Ref CW 31/11



# SET YOUR SIGHTS HIGH - REACH THE TOP!

★ Why not consider moving to a more rural area - relaxed country atmosphere

## ANALYST PROGRAMMERS

HERTS  
One of the country's leading retail organisations seeks analyst programmers to work at team leader level on the development of new batch, interactive and distributed systems. Company currently retain Burroughs B.3700, 4700 series hardware and are also investing in PDP 11 equipment. They seek persons with 2 years' exp in design analysis and/or programming (ANY LANGUAGE) to make a career with them.  
★ Universal opportunity to learn new languages and get on to MINI computers.  
★ Significant user contacts.  
★ RELOCATION expenses.  
★ Salary to £6150

REF. 1655

## PROGRAMMERS

MIDDLESEX  
A major organisation in the retail trade is now pursuing further interests at a rapid rate. Retaining NCR Century equipment with new Comshare V8500 scheduled for delivery at the end of the year, they seek programmers with 3 years COBOL experience on any machine for their major stock control systems utilising TOTAL database.  
★ Plenty of new development work.  
★ Training in database.  
★ Sports and social club in beautiful ground, heated outdoor pool, squash court, etc.  
★ Excellent perks - LVA, discounts on co. goods.  
★ Salary to £6250

REF. 1855

## PROGRAMMERS

HOLLAND  
Prestige world wide manufacturing company location in Amsterdam seeks programmers with minimum 2 years COBOL & ASSEMBLER or PL/I and Assembler experience to become involved in the development of sophisticated communications system.  
Co. offers:  
★ Excellent prospects for career path.  
★ Varied work of highly interesting nature.  
★ First-class perks including RELOCATION expenses.  
★ Salary range £11-£13000 neg.

REF. 1853

## MINI PROGRAMMERS

HOLLAND & BELGIUM  
We would like to hear from programmers on behalf of our clients, with good MINI exp. If you have had at least 2 years' experience of ASSEMBLER on any mini computer - contact us immediately to discuss on-going projects in the above countries.  
★ Accommodation and expenses paid by the company.  
★ Renewable assignments.  
★ Excellent scope in a variety of areas.  
★ Salary £12000 neg. A.A.E.

REF. 1803



Computing Services Association

## CHIEF PROGRAMMER

LONDON  
Our client, a major national retail organisation seeks a chief programmer in take control of 15 programmers. Company retains IBM 370 to which a 3031 will be added shortly ideal applicant will have at least 5 years' programming experience in an IBM environment using ASSEMBLER, COBOL and DL/I. Job entails full management responsibilities and person will be expected to play a leading role in implementation for improved programming techniques.  
Co. offers:  
★ Progressive organisation  
★ Flexible hours  
★ Full scale of projects  
★ Excellent fringe benefits which include free lunch and discount on company products  
★ Salary to £6000

REF. 1874

## PROGRAMMER

SURREY  
World leaders in their field, this organisation has an impressive wide range of business interests and is rapidly expanding. At their computer centre they have IBM 370, mini computers and additional new equipment scheduled, consequently needing programmers with min. 18 months' COBOL, ASSEMBLER or RPGII exp. to work as part of a project group.  
★ Opportunity to go into analysis, with good scope for analysis.  
★ Fantastic working conditions, including large sports and social club.  
★ Paid overtime, flexi-time, insurance cover.  
★ Subsidised staff restaurant.  
★ Salary to £5600.

REF. 1874

## PROGRAMMER

MIDDLESEX  
One of the most significant forces in the computer services industry in the UK, our clients provide a comprehensive range of services to clients worldwide, retaining IBM 370, 1586 co. seek programmer with min. 18 months' COBOL and/or PL/I exp. They offer:  
★ Moves with programming into systems analysis of sales support or join one of their specialist groups.  
★ Chance to move on to MINI computers.  
★ Located within easy reach of London.  
★ Relocation expenses.  
★ Salary to £6500

REF. 1451

## IBM PROGRAMMERS

KENT  
Our client, an international pharmaceutical company seeks programmers to join their rapidly expanding DP dept. They retain IBM 370 and 1586, people with minimum of 12 months' COBOL, exp. preferably under OS. Company offers excellent opportunities for movement into systems analysis, design and software support. Co. offers:  
★ Full training in TP and IMS Database.  
★ Flexi hours.  
★ Excellent facilities for career development.  
★ First-class perks which include sports and social club, sub. restaurant, pension and sick schemes.  
★ Salary to £5600.

REF. 1819

## MINI PROGRAMMERS

HOLLAND & BELGIUM  
Our client, an international pharmaceutical company seeks programmers to join their rapidly expanding DP dept. They retain IBM 370 and 1586, people with minimum of 12 months' COBOL, exp. preferably under OS. Company offers excellent opportunities for movement into systems analysis, design and software support. Co. offers:  
★ Full training in TP and IMS Database.  
★ Flexi hours.  
★ Excellent facilities for career development.  
★ First-class perks which include sports and social club, sub. restaurant, pension and sick schemes.  
★ Salary to £5600.

REF. 1803

For further details of the above positions and of the many others we have available in urban and rural areas - please ring our London office: 01-734 0152/3010.

REF. 1803

REF. 1803

## ANALYST PROGRAMMER

LONDON  
Multi-national company retaining large IBM 370 hardware requires programmers with at least 12 months' ASSEMBLER experience to join highly professional team. They are currently developing a major sophisticated on-line systems Co. offers:  
★ Highly progressive organisation.  
★ Continued development with a well planned schedule.  
★ Good promotional prospects.  
★ Excellent benefits including cheap travel.  
★ Salary to £6000

REF. 1290

## ANALYST PROGRAMMER

BRITAIN  
Our client, a major preservation society based in rural Wiltshire have vacancies for analyst programmers with at least 18 months' RPGII experience. They are involved at present in taking over all major systems from their head office and have their development work planned for the next 5 years. Co. offers:  
★ Opportunity to move to more advanced technical projects and a variety of languages and machines.  
★ Paid overtime - flexi hours - sub. restaurant, amongst many of the excellent perks.  
★ Relocation expenses.  
★ Salary to £6500

REF. 1837

## ANALYST PROGRAMMER

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REF. 1837

## ANALYST PROGRAMMER

BRITAIN  
Our client, a major preservation society based in rural Wiltshire have vacancies for analyst programmers with at least 18 months' RPGII experience. They are involved at present in taking over all major systems from their head office and have their development work planned for the next 5 years. Co. offers:  
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Personnel Services Manager,  
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Gateway House, Basing View, Basingstoke,  
Hampshire RG21 2EE.  
Telephone: Basingstoke 20262. Extension 3100.

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## Chief Programmer

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A major international group seek an experienced person to fill this important computer vacancy at their Crawley Engineering Complex. The computer department supply a service to production, accounts, design and sales departments. DEC and Prime computers support 50 terminals in the offices and for associated companies as well as Batch Processing services. The successful applicant will supervise and schedule programming within the department and be responsible for establishing and supervising programming standards and disciplines. It is essential that the job holder has a sound education to degree standard, followed by six to ten years' experience of data processing, part of which should have been in a supervisory capacity.

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Senior Personnel Officer  
APV Co. Ltd.  
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Crawley, Sussex  
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For more information ring Helen C. Ralston (Senior Personnel Officer) on Stoke-on-Trent (0782) 29681 ext. 3277. Alternatively write to her quoting reference CW1943 at ICL, West Avenue, Kidsgrove, Stoke-on-Trent ST7 9TL.

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For further details and application form (to be returned by 25 August 1978) write to Ministry of Defence, CM(S)1b3, Room 310, Savoy Hill House, Savoy Hill, Strand, London, WC2R 0BX. Please quote ref: SA/161/EM.

APPLICANTS are invited for the above post from persons with a minimum of three years' programming experience, preferably in COBOL. Experience of Honeywell computers, although not essential, would be an advantage.

INTERESTED? An attractive salary will be offered to the right person. Please apply in the first instance to:

## IRISH RECRUITMENT FEATURE

Advertisers are reminded that the next Computer Weekly area feature will be published on August 24 and will highlight career opportunities in Ireland.

Space reservations should be made as soon as possible to:

Owen Kelly — Manchester — 061-872 4211  
Eddie Farrell — London — 01-261 8097

Copy Deadline: PM Friday before

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They currently have a vacancy for a Senior Programmer with a real opportunity for the right person to progress in a technically advanced field. Candidates must have a minimum of three to four years Cobol in a commercial environment, and experience of Database and communications techniques would be a distinct advantage, although training can be given in these areas.

This is a tremendous opportunity to progress quickly in an advanced and challenging environment, and the successful candidate will therefore be well rewarded, including being given assistance with relocation where necessary.

For further details contact: Peter Smith or Ruth Cayley, 061-928 8302.  
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An Analyst who has worked as part of a team in developing banking applications will be considered. This is a challenging opportunity and as such only applicants who possess the desire to progress their careers within a very professional environment should apply.

Preference will be given to candidates who are under 30 years of age, married and without children of school age.

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### COLAIST NA HOLLSCOILE CORKAIGH UNIVERSITY COLLEGE, CORK INFORMATION & DOCUMENTATION OFFICER

In the Computer Bureau

Applications for the above post are invited from Technical authors or Systems Analysts with experience of documentation systems and standards.

The Computer Bureau provides a comprehensive computer service for academic and administrative departments within the College. Intercollegiate computing facilities are supported by an IBM 370/160 SP Computer.

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Preference will be given to candidates who have had previous experience in the design, implementation and maintenance of documentation systems in a major installation.

The successful candidate may be offered a fixed-term contract or a permanent position.

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Further particulars and application form may be obtained from the Establishment Officer, University College, Cork, Ireland.

CLOSING DATE for completed applications Wednesday, August 30, 1978.

## AUSTRALIA SYSTEMS ANALYST

We are the service company for the Australian banks' national credit card scheme - Bankcard.

Our Systems Manager is visiting Britain during the second half of September. He would be interested to meet Systems Analysts who are considering immigrating to Australia. Our offices are in the Sydney area.

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We operate twin IBM 370 equipment in both batch and real-time modes. Network applications are front-ended through PDP mini's.

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Ideally the person should have come through a programming background and be able to take systems down to program specification level. The position will be largely concerned with overall systems and project control and proven experience in this area is expected.

We would regard this as an important step for a person who is ambitious and we think this could be your opportunity.

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Applications are invited for the post of 'Programming Adviser in the Applications Section which is concerned with assisting users and developing packages. Candidates should normally possess an honours degree in Science or Mathematics and have computing experience in one of the following areas: data management, data analysis, text processing.

The appointment will be for 18 months from October 1, 1978. Salary on the first five points of the Research Fellow scale (£3680-£4601) plus superannuation.

Further particulars and application form from the Assistant (Commerce), University of Aberdeen, Birmingham, P.O. Box 383, B15 2TT, to whom the form, naming three referees, should be returned by Friday, August 25, 1978, quoting reference C/201/FF.

### UNIVERSITY OF BIRMINGHAM FACULTY OF COMMERCE AND SOCIAL SCIENCE Department of Economics

### RESEARCH FELLOW (RANGE 1A) IN COMPUTING

The Computing Laboratory needs a Research Fellow to join its team of Programmers who are responsible for maintaining and developing both the VME K operating system used on the University ICL 2980 computer and the communications software developed by the University to link a number of PDP-11 computers to the main frame.

It is expected that the person appointed will be a graduate or of equivalent status and should have a sound knowledge of a high level language. The appointment will be for two years from October 1, 1978. The salary is £3680-£4601 plus superannuation.

Further particulars and application form from the Assistant (Commerce), University of Birmingham, P.O. Box 383, B15 2TT, to whom the form, naming three referees, should be returned by Friday, August 25, 1978, quoting reference A/201/FF.

### UNIVERSITY OF KENT AT CANTERBURY COMPUTING LABORATORY

### PROGRAMMER

The Computing Laboratory needs a Programmer to join its team of Programmers who are responsible for maintaining and developing both the VME K operating system used on the University ICL 2980 computer and the communications software developed by the University to link a number of PDP-11 computers to the main frame.

It is expected that the person appointed will be a graduate or of equivalent status and should have a sound knowledge of a high level language. The appointment will be for two years from October 1, 1978. The salary is £3680-£4601 plus superannuation.

Further particulars and application form from the Assistant Registrar, The Registry, The University, Canterbury, CT2 7NZ (Telephone Canterbury 68822 Ext. 293), quoting reference A/201/FF. The closing date is 31 August, 1978.

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For further details contact:

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Graham Lion Limited  
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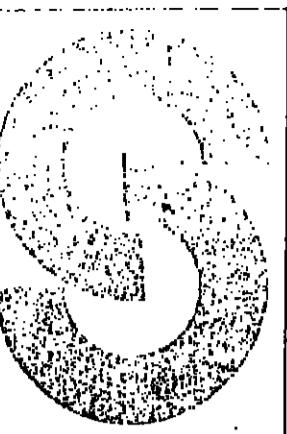
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The software environment is VM with DOS/VS, OS/VG1 and CMS. The teleprocessing monitor is SHADOW with TWA, the memory editor, in IBM Assembler. Batch work is handled almost entirely by Informatics' MARK IV file management system.

The successful candidate will be responsible for the maintenance and further development of the TWA SHADOW teleprocessing network. He or she must have been involved in depth with the implementation of at least one major teleprocessing system and be fully conversant with the characteristics of IBM's communication hardware.

This post is open to male and female applicants 24 days holiday (minimum) per annum.

Pension scheme — Interchange arrangements.

Please send your application, giving full details of age, educational qualifications, previous experience and present post quoting reference 78/84 CW or not later than August 14 to:

Laurence O. Wild  
C.E.C., F.I.C.E., F.I. Mech.E., F.I.W.E.S.  
Divisional Manager  
Room 850  
Thames Water Authority  
Metropolitan Water Division  
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Not only does our Client offer an excellent basic package which could be as high as £15,000 (commission is payable over and above the guarantee), but there is also a professional management structure with a well designed career path. The normal benefits attributed to a major organisation together with a very generous car allowance.

Interested applicants should contact Roy Highfield and interviews will be arranged as soon as possible.

Ref. CW-18/1

## THE SALES BIT

### More than one way of making a point

We are all at risk to the vagaries of inter-person communications. We are all emotional beings despite the exterior we present to the world. We are as if in a post-box, looking out through the slit, insecure and secretive, needing to be liked and wanting to be liked.

When people communicate to us by voice or by letter we unconsciously carry out our own interpretation upon it which varies in extremes, depending on our emotional state at the time. The same words can veer from pleasing to offensive, depending on our state of mind. It is so easy to "get the wrong end of the stick" because of a gesture, a look, intonation or the semantics of language.

If this reflects the potential attitude of the recipient, then there is obviously some value in the other party considering the possible effect of a communication, before it is transmitted. There is always more than one way of making any statement; a point can always be made without causing offence.

From the salesman's point of view, it is essential to anticipate the effect of every communication, particularly when using the telephone. There are many situations where it is important for him not to say exactly what he thinks because to do so would be disastrous.

It is often the salesman's best strategy to make a point against himself when he feels like making one against his client. The responses to "I don't understand" could be many.

1. "I'll go through it again."  
2. "It's quite simple really."  
3. "You weren't listening."

4. "What all of it?"

When the salesman turns it against himself and says something like "I'm sorry, I didn't put it as clearly as I should have," he makes a real contribution towards developing an empathetic environment for negotiation.

Take another example, "Our payroll is unique."

1. "No it isn't."  
2. "That's what they all say."  
3. "What makes you think that?"  
4. "We could always bend the package for you."

To contradict is destructive and unnecessary. It is far better for the salesman to agree, then qualify the statement. "I imagine it is rather complex, but if we could utilise some of our standard program modules for tax tables and so on, it would reduce system costs."

One often sees the inconsiderate use of language at work in the communications between management and subordinates.

"You have failed" is so much more destructive than "You have not enjoyed the success we know you are capable of." The same thing really, only different, except that one demotivates, the other challenges.

## Puzzle answer

THE first Stanford Research Institute, now called SRI International, has moved its London office to 5th Floor, 24 Buckingham Gate, SW1E 6LR. The California-based consultancy's main European office remains at 12/16 Addiscombe Road, Croydon, CR0 4LS.

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